

WHAT IS CLAIMED IS:

1. A liquid crystal display device comprising:

a first substrate;

a second substrate;

5 a liquid crystal layer disposed between the first substrate and the second substrate;

a plurality of picture element regions for producing a display; and

in each of the plurality of picture element regions, a
10 picture element electrode provided on a face of the first substrate facing the liquid crystal layer and a switching element electrically connected to the picture element electrode,

wherein the picture element electrode includes a
15 plurality of sub-picture element electrodes and a plurality of contact portions each for mutually electrically connecting at least some of the sub-picture element electrodes, and

at least one of the plurality of sub-picture element electrodes is electrically connected to the switching element
20 via a plurality of connection paths.

2. The liquid crystal display device of Claim 1, further comprising a counter electrode provided on the second substrate and opposing the picture element electrode with the liquid crystal layer sandwiched therebetween,

25 wherein the picture element electrode is composed of a

solid portion including the plurality of sub-picture element electrodes and the plurality of contact portions, and a plurality of openings, and

in each of the plurality of picture element regions, the liquid crystal layer is formed into a plurality of liquid crystal domains each in a radially-inclined orientation state correspondingly to the plurality of openings and the solid portion by inclined electric fields generated at respective edge portions of the plurality of openings of the picture element electrode when a voltage is applied between the picture element electrode and the counter electrode, whereby producing a display by changing orientation states of the plurality of liquid crystal domains in accordance with the applied voltage.

3. The liquid crystal display device of Claim 2, wherein at least some of the plurality of openings have substantially the same shape and the same size, and form at least one unit lattice arranged so as to have rotational symmetry.

4. The liquid crystal display device of Claim 3, wherein each of the at least some of the plurality of openings is in a rotationally symmetrical shape.

5. The liquid crystal display device of Claim 3, wherein each of the at least some of the plurality of openings is in a substantially circular shape.

6. The liquid crystal display device of Claim 3,

wherein each region of the solid portion surrounded with the at least some of the plurality of openings is in a substantially circular shape.

5 7. The liquid crystal display device of Claim 2,

wherein, in each of the plurality of picture element regions, a total area of the plurality of openings of the picture element electrode is smaller than an area of the solid portion of the picture element electrode.

10 8. The liquid crystal display device of Claim 2, further comprising a protrusion within each of the plurality of openings,

wherein a cross-sectional shape of the protrusion taken in a plane direction of the substrate is the same as a shape
15 of the corresponding opening, and

a side face of the protrusion has orientation-regulating force for orienting liquid crystal molecules of the liquid crystal layer in the same direction as an orientation-regulating direction obtained by the inclined
20 electric fields.

9. A defect repairing method for a liquid crystal display device,

the liquid crystal display device including a first substrate; a second substrate; a liquid crystal layer
25 disposed between the first substrate and the second

substrate; a plurality of picture element regions for producing a display; and in each of the plurality of picture element regions, a picture element electrode provided on a face of the first substrate facing the liquid crystal layer and a switching element electrically connected to the picture element electrode, the picture element electrode being composed of a plurality of sub-picture element electrodes and a plurality of contact portions for mutually electrically connecting at least some of the plurality of sub-picture element electrodes, and at least one of the plurality of sub-picture element electrodes being electrically connected to the switching element via a plurality of connection paths,

the defect repairing method comprising the steps of:

specifying a picture element region having a display defect among the plurality of picture element regions and specifying a sub-picture element electrode suffering from short-circuit among the plurality of sub-picture element electrodes in the specified picture element region; and

electrically disconnecting the specified sub-picture element electrode from the switching element with keeping electrical connection between the at least one of the plurality of sub-picture element electrodes and the switching element by cutting off a contact portion connected to the specified sub-picture element electrode among the plurality of contact portions.

10. A liquid crystal display device comprising:

a first substrate;

a second substrate;

a liquid crystal layer disposed between the first
5 substrate and the second substrate;

a plurality of picture element regions for producing a
display; and

in each of the plurality of picture element regions, a
picture element electrode provided on a face of the first
10 substrate facing the liquid crystal layer and a switching
element electrically connected to the picture element
electrode,

wherein the picture element electrode includes a
plurality of sub-picture element electrodes electrically
15 connected to the switching element in parallel.

11. A defect repairing method for a liquid crystal
display device,

the liquid crystal display device including a first
substrate; a second substrate; a liquid crystal layer
20 disposed between the first substrate and the second
substrate; a plurality of picture element regions for
producing a display; and in each of the plurality of picture
element regions, a picture element electrode provided on a
face of the first substrate facing the liquid crystal layer
25 and a switching element electrically connected to the picture

element electrode, and the picture element electrode including a plurality of sub-picture element electrodes electrically connected to the switching element in parallel,

the defect repairing method comprising the steps of:

5 specifying a picture element region having a display defect among the plurality of picture element regions and specifying a sub-picture element electrode suffering from short-circuit among the plurality of sub-picture element electrodes in the specified picture element region; and

10 electrically disconnecting the specified sub-picture element electrode from the switching element with keeping electrical connection between the plurality of sub-picture element electrodes other than the specified sub-picture element electrode and the switching element.

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